

512

PIONEER 10 & 11
15 MIN. AVG JUPITER AND SATURN ENCOUNTER
73-019A-12A, 12B
72-012A-12A

PIONEER 10

15 MIN. AVERAGED JUPITER ENCOUNTER

72-012A-12A

This data set has been restored. There was originally
1 binary 9-track, 1600 BPI tape. There is one restored tape.
The DR tape is a 3460 cartridge and the DS tape is 9-track,
6250 BPI. The tape was created on an IBM 360 computer.
The DR and DS number along with the corresponding D number
and the time spans are as follows:

DR#	DS#	D#	FILES	TIME SPAN
DR03224	DS03224	045492	1-5	11/26/73 - 12/15/73

PIONEER 11

15 MIN. AVERAGED JUPITER ENCOUNTER

73-019A-12A

This data set has been restored. There was originally 1 Binary 9-Track, 1500 BPI tape. There is one restored tape. The DR tape is a 3480 cartridge and the DS tape is 9-track; 5250 BPI. The tape was created on an IBM 360 computer. The DR and DS number along with the corresponding D number and the time spans are as follows:

DR#	DS#	D#	FILES	TIME SPAN
DR03177	DS03177	D45503	1 0 5	11/26/74 - 12/09/74

DSC 512

PIONEER 11

15 MIN. AVERAGED SATURN ENCOUNTER

73-019A-12B

THIS DATA SET HAS BEEN RESTORED. THERE WAS ORIGINALLY ONE BINARY 9-TRACK, 1600 BPI TAPE. THERE IS ONE RESTORED TAPE. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE TAPE WAS CREATED ON AN IBM 3081 COMPUTER. THE DR AND DS NUMBERS ALONG WITH THE CORRESPONDING D NUMBER AND THE TIME SPAN IS AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR03178	DS03178	D45504	4	08/31/79 - 09/04/79

REQ. AGENT

DEW

RAND NO.

ACQ. AGENT

WSC

PIONEER 10

PIONEER 11

73-019A-12A,12B

72-012A-12A

15 MIN. AVG. JUPITER AND SATURN ENCOUNTER

Each data set consists of one tape. The tapes are 1600 BPI, 9 track,
and are multifiled. The tapes were created on an IBM-360 computer.

72-012A-12A

<u>D#</u>	<u>C#</u>	<u>Files</u>	<u>Time Span</u>
D-45492	C-21801	5	11/26/73-12/15/73

73-019A-12A

D-45503	C-21799	5	11/26/74-12/09/74
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73-019A-12B

D-45504	C-21800	4	08/31/79-09/04/79
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Pioneer 10 and 11
Goddard/U. New Hampshire Cosmic Ray Experiment
Jupiter and Saturn Encounter Data

Instrumentation

This experiment consists of a set of three solid-state telescopes, each designed to complement the others and to cover a broad range in energy, intensity and charge spectra. The three telescopes are shown schematically in the attached figure; they are the high-energy telescope (HET) and two low-energy telescopes (LET-I and LET-II). The HET and LET-I are designed primarily for measuring the relatively low fluxes of cosmic rays in interplanetary space. As such, their geometry factors are relatively large, and they cannot tolerate fluxes $\geq 2 \times 10^4/\text{cm}^2 \text{ s sr}$. Their usefulness is, therefore, limited to the outer regions of the Jovian magnetosphere ($\geq 20 R_J$). They are, however, high-resolution double dE/dX vs. E instruments that provide unambiguous particle identification and precise energy spectra, so that their contribution to the overall body of data is quite significant.

The LET-II telescope was designed to measure low-energy solar flare particles in interplanetary space and trapped particles in the Jovian magnetosphere. It has a relatively small geometry factor ($1.5 \times 10^{-2} \text{ cm}^2 \text{ sr}$) and can readily measure fluxes up to $\sim 5 \times 10^5/\text{cm}^2 \text{ s sr}$. It is surrounded by a colimator and shield which will stop electrons up to $\sim 4.5 \text{ MeV}$ and protons up to $\sim 40 \text{ MeV}$. The telescope employs a two-parameter analysis technique to separate electrons and protons. The front element SI has an electronic threshold that is set so that any electron penetrating to SII is below threshold and any proton penetrating to SII is above threshold. Selected counting rates in all three telescopes are divided into eight angular sectors to measure particle anisotropies.

A major effort has been devoted to understanding the response of all detector systems in the presence of intense particle fluxes. The onset of saturation in the LET and HET systems is abrupt and well defined. Negligible corrections are necessary prior to this saturation point.

There is significant overlap in the response functions of the three telescopes, and it was of great value to observe the consistency between flux measurements made with completely different detector systems. For example, the LET-I and LET-II proton data in the 0.5- to 2-MeV region are in excellent agreement. This finding is especially helpful in the outer Jovian magnetosphere where the nuclear component is small (1-10%) in comparison with electrons of the same energy. A complete description of this instrument has been published in the IEEE Transactions on Nuclear Science (Stilwell et al., 1975). The energy and charge ranges of each telescope are summarized in Table 1.

Since the Goddard/University of New Hampshire experiment was primarily designed as an interplanetary experiment, its telemetry assignment was minimal during the Jupiter and Saturn encounters. Consequently, individual pulse heights were sampled infrequently, and most of the results have to be based on rate data. This leaves some ambiguity about the type of particles responsible for the counts. This problem arises primarily in identifying protons vs. alpha particles and heavier ions. LET-I and LET-II respond differently because of the aluminized mylar foil in front of the LET-I detector. On this basis, it has been concluded (McDonald et al., 1979) that the nominal "proton channels" respond primarily to protons at Jupiter; however, some admixture of heavier ions is clearly present and the amount is time dependent. It is hoped that further analysis can narrow down the uncertainty.

Data have been included only for periods when the detectors operated in this design range. This excludes the inner magnetosphere. At Jupiter, the detectors were heavily saturated in this region, while at Saturn a very penetrating radiation prevented a clear identification of the type and energy of the particles responsible for our counts. Some of the published results from this experiment required extensive corrections for deadtime, accidental coincidences and anticoincidences (Trainor et al., 1974; McDonald and Trainor, 1976; McDonald et al., 1980). These corrections can be applied only on a case-by-case basis after careful study of the environment and many self-consistency checks. They cannot be applied on a systematic basis and we have no computer programs to do so. A special problem arose during the Pioneer 10 out pass from Jupiter. Radiation damage to the digital logics decreased the margins in these circuits. Although most of the data is good, certain bits failed to reset every now and then. For 15-minute averages, this effect can generally be ignored; but the user should be aware that a few points are off due to this problem. If a user is interested in data not included in this submission or has special questions, the experimenters will be glad to consider requests if the desired information can be extracted from the data.

Description of the Data

In the following rate definitions, individual detectors are identified by the same symbols as in the attached figure. Any subscripts refer to different trigger thresholds on that detector (SIIA is an annular guard detector in LET-II which is not labeled in the figure). Several detectors defining a rate are in coincidence unless a bar over the symbol indicates that the detector is in anticoincidence.

- (1) A₂ Rate (Saturn only) gives the counting rate in a 2.5-mm thick Si detector with an area of 3.0 cm². Since the threshold is set at 2.01 MeV, it responds primarily to energetic electrons; however, the effective solid angle and detection efficiency are not well known. This rate is given for Saturn because the more desirable coincidence rates suffered from excessive accidentals (note A₂ is identified as A2 on tape).
- (2) A₁ A₂ B CI Rate (Jupiter only) gives the flux of electrons with a range between 2.5 and 5.0 mm of Si which deposit less than 2 MeV in the front detector. The electron energy falls into the range of about 1.8 to 3.2 MeV (on the tape this rate is identified as A1.-A2.B.-C1).
- (3) A₁ A₂ B CI CII Rate (Jupiter only) gives the electron flux with a range of 5 to 10 mm Si; the approximate energy range of 3.2 to 5.1 MeV (the rate ID is A1.-A2.B.C1.-C2).
- (4) A₁ A₂ B CI CII CIII Rate (Jupiter only) gives the electron flux with a range of 10 to 15 mm Si; the approximate electron energies are 5.1 to 8 MeV (the rate ID is A1.-A2.B.C1.C2.-C3).
- (5) SI SII₅ SIIA SIII Rate gives the flux of electrons in LET-II which do not trigger the 0.145 MeV threshold in the 50 γ front detector and trigger the 50 keV threshold in the 2.5-mm thick second detector. The anticoincidence requirement with the annular guard counter SIIA and rear detector SIII insures that the electrons stop in SII. Our calibrations show that the 50% efficiency points occur at 0.16 and 2.0 MeV. If the electron spectrum is hard, this rate will also respond to bremsstrahlung and electrons penetrating the collimator. The latter effect made the

dominant contribution in the inner Saturnian magnetosphere; otherwise, it is believed to be small but is difficult to evaluate (the rate ID is -S1.S2(5).-S2(A).-S3).

- (6) SI SII₆ SIIA SIII Rate is equivalent to rate (5) but with a 0.35-MeV threshold in SII, corresponding to electron energies from 0.43 to 2.0 MeV (the rate ID is -S1.S2(6).-S2(A).-S3).
- (7) SI SII₇ SIIA SIII Rate is equivalent to rate (5) but with a 0.7 MeV threshold in SII corresponding to electron energies from 0.8 to 2.0 MeV (the rate ID is -S1.S2(7).-S2(A).-S3).
- (8) SI SII₈ SIIA SIII Rate is equivalent to rate (5) but with a 1.0-MeV threshold in SII corresponding to electron energies from 1.1 to 2.0 MeV (the rate ID is -S1.S2(8).-S2(A).-S3).
- (9) DI₄ Rate gives the flux of protons and ions which penetrate a 0.53-mg/cm² aluminized mylar foil and deposits at least 0.60 (P-10) or 0.63 (P-11) MeV in detector DI of LET-I. (This rate is not given for the Saturn encounter because of substantial electron contamination.) For protons, this corresponds to energies from 0.84 to 15.1 MeV.
- (10) DI₅ Rate is equivalent to rate (9), but with a threshold in DI of 0.95 MeV corresponding to proton energies between 1.11 and 8.1 MeV.
- (11) DI₆ Rate is equivalent to rate (9), but with a threshold in DI of 1.45 MeV corresponding to proton energies from 1.6 to 5.1 MeV.
- (12) DI₇ Rate is equivalent to rate (9), but with a threshold energy in DI of 2.20 (P-10) or 2.05 (P-11) MeV corresponding to proton energies from 2.3 to 3.6 MeV and 2.1 to 3.8 MeV, respectively, for P-10 and P-11.
- (13) DI DII E₂ F Rate from LET-I gives the proton flux between 10.3 and 21 MeV for P-10 and between 11 and 21 MeV for P-11. A small correction has

been made for the contribution from alphas and heavier nuclei in the same energy/nucleus range (the rate ID is D1.D2.E2.-F - D1.D2.} D.E4.-F).

- (14) SI₁-SII-SIIA-SIII Rate gives the flux of protons and heavier ions which stop in the 50 γ -thick Si detector SI and deposits an energy between 0.16 and 2.6 MeV. This corresponds to proton energies between 0.20 and 2.15 MeV (P-10) or 2.17 MeV (P-11). Detector SI is shielded by only 0.12 mg/cm² of Al and is, therefore, relatively sensitive to low-energy ions. At Saturn, the ion contribution is negligible; however, it may be significant at Jupiter (the rate ID is S1(1).-S2.-S2(A).-S3 - S1(4).-S2.-S2(A).-S3).
- (15) SI₆ SII SIIA SIII Rate is equivalent to rate (14) except that the threshold in SI is 0.47 (P-10) or 0.5 (P-11) MeV, this corresponds to proton energies of 0.50 to 2.15 and 0.53-2.17 MeV for P-10 and P-11, respectively (the rate ID is S1(6).-S2.-S2(A).-S3 - S1(4).-S2.-S2(A).-S3).
- (16) SI₂ SII SIIA SIII Rate is equivalent to rate (14) except that the threshold is 0.74 (P-10) an 0.72 (P-11), this corresponds to proton energies of 0.76-2.15 MeV (P-10) and 0.74-2.17 MeV (P-11) (the rate ID is S1(2).-S2.-S2(A).-S3 - S1(4).-S2.-S2(A).-S3).
- (17) SI₃ SII SIIA SIII Rate is equivalent to rate (14) except that the threshold is 1.2 MeV, corresponding to proton energies of 1.24 to 2.15 MeV (1.24-2.17, P-11) (the rate ID is S1(3).-S2.-S2(A).-S3 - S1(4).-S2.-S2(A).-S3).
- (18) SI SII₁ SIIA SIII Rate gives the flux of protons between 3.13 and 14.8 MeV for Pioneer 10 (3.19-14.9 MeV, P-11) (the rate ID is S1.S2(1).-S2(A).-S3 - S1.S2(3).-S2(A).-S3).

(19) SI SII₂ SIIA SIII Rate is equivalent to rate (18) except for a higher threshold and covers protons from 5.65 to 14.8 MeV for P-10 (5.68 to 14.9 MeV for P-11) (The rate ID is S1.S2(2).-S2(A).-S3 - S1.S2(3).-S2(A).-S3).

Data Format

Time history of Pioneer Cosmic Ray Telescope data described above is being submitted on 9-track tapes recorded at 1600 BPI. Tape marked PIOJUF contains Pioneer-10 data, the one marked PIOJUG contains Pioneer-11 data for Jupiter encounter and tape marked PIOSAG contains Pioneer-11 data for the Saturn encounter. Averaging interval for all data is fifteen minutes.

PIOJUF and PIOJUG each have five files and PIOSAG has four files. Contents of PIOJUF, PIOJUG and PIOSAG are described in Tables 2 to 4, respectively. Each file consists of a number of Flux Time History (FTH) records. An FTH record contains a count of the number of data items (NBIN) whose time-history is included in the record, a count of the number of averaging intervals (NINT) included in the record and definitions of data items included and time-history data. Table 5 defines the structure of an FTH record in detail. These tapes were generated on an IBM System 360 computer; thus, a word consists of 32 bits, half-word 1 is the high order 16-bit field of the word and half-word 2 the low order half (bits 16-31, with the left-most or MSB numbered 0). Characters are represented in 8-bit EBCDIC bytes, real numbers are represented in the IBM single precision floating point format. Length (in words) of an FTH record is given by:

$$200 + (3 + 2 * \text{NBIN}) * \text{NINT}.$$

REFERENCES

- McDonald, F.B., and J.H. Trainor, Observations of Energetic Jovian Electrons and Protons," in Jupiter, ed. T. Gehrels, Univ. Ariz. Press, 961, 1976.
- McDonald, F.B., A.W. Schardt and J.H. Trainor, "Energetic Protons in the Jovian Magnetosphere," J. Geophys. Res. 84, 2579, 1979.
- McDonald, F.B., A.W. Schardt and J.H. Trainor, "If You've Seen One Magnetosphere, You Haven't Seen Them All: Energetic Particle Observations in the Saturn Magnetosphere," J. Geophys. Res. 85, 5813, 1980.
- Stilwell, D.E., R.M. Joyce, J.H. Trainor, H.P. White, G. Streeter and J. Bernstein, "Pioneer 10/11 and Helios A/B Cosmic Ray Instruments," IEEE Trans. Nucl. Sci. 22, 570, 1975.
- Trainor, J.H., F.B. McDonald, B.J. Teegarden, W.R. Webber and E.C. Roelof, "Energetic Particles in the Jovian Magnetosphere," J. Geophys. Res. 79, 3600, 1974.

TABLE 1: Pioneer 10 and 11 Detectors Used during Planetary Encounters

<u>Detector</u>	<u>Shielding</u>	<u>Energy Range (MeV)</u>	<u>Geometric Factor (cm² sr)</u>	<u>Comments</u>
PROTONS:				
o LET I	0.53 mg/cm ² Mylar			
DI only		0.84-15.1	1.13	
DI DII E ₂ \overline{F}		10.3 -21 11.0 -21	(P10) (P11)	Several channels of protons and ions that exceed threshold in DI. The proton flux from rate agrees with pulse-height analyzed data.
o LET II	0.120 Mg/cm ² Al			
SI SII SIII SIV		0.2 - 2.15 0.2 - 2.17	(P10) (P11)	Several channels of protons and some heavier ion contributions.
SI SII SIII SIV		3.2 -14.8		Protons.
ELECTRONS:				
o HET				
$A_1 \overline{A_2} B \overline{C_1}$		2.5- 5 mm Si	1.8 - 3.2	0.22
$A_1 \overline{A_2} B C_1 \overline{C_2}$		5.0-10 mm Si	3.2 - 5.1	Coincidence rates with good background rejection, but accidental coincidence problems at high counting rate.
$A_1 \overline{A_2} B C_1 C_2 \overline{C_3}$		10 -15 mm Si	5.1 - 8	
o LET II				
SI SII SIII SIV		0.16- 2	0.015	Several electron channels. Some contamination from collimator penetration and bremsstrahlung.

Table 2. Contents of PIOJUF

<u>FILE</u>	<u>RATES</u>	<u>TIME PERIOD</u>		
1	A ₁ <u>A₂</u> B <u>CI</u>	11/26/73	00:00:00-12/01/73	18:00:00 AND
	A ₁ <u>A₂</u> B CI <u>CII</u>	12/04/73	22:00:00-12/16/73	00:00:00
	A ₁ <u>A₂</u> B CI CII <u>CIII</u>			
2	<u>SI</u> SII ₅ <u>SIIA</u> <u>SIII</u>	11/26/73	00:00:00-12/03/73	08:00:00 AND
	<u>SI</u> SII ₆ <u>SIIA</u> <u>SIII</u>	12/04/73	15:00:00-12/16/73	00:00:00
	<u>SI</u> SII ₇ <u>SIIA</u> <u>SIII</u>			
	<u>SI</u> SII ₈ <u>SIIA</u> <u>SIII</u>			
3	DI ₄	12/26/73	00:00:00-12/03/73	08:00:00 AND
	DI ₅	12/04/73	22:00:00-12/16/73	00:00:00
	DI ₆			
	DI ₇			
	DI DII E ₂ <u>F</u>			
4	SI ₁ <u>SII</u> <u>SIIA</u> <u>SIII</u>	11/26/73	00:00:00-12/03/73	08:00:00 AND
	SI ₆ <u>SII</u> <u>SIIA</u> <u>SIII</u>	12/04/73	15:00:00-12/16/73	00:00:00
	SI ₂ <u>SII</u> <u>SIIA</u> <u>SIII</u>			
5	SI ₃ <u>SII</u> <u>SIIA</u> <u>SIII</u>	11/26/73	00:00:00-12/03/73	08:00:00 AND
	SI SII ₁ <u>SIIA</u> <u>SIII</u>	12/04/73	15:00:00-12/16/73	00:00:00
	SI SII ₂ <u>SIIA</u> <u>SIII</u>			

Table 3. Contents of PIOJUG

<u>FILE</u>	<u>RATES</u>	<u>TIME PERIOD</u>		
1	A ₁ <u>A₂</u> B <u>CI</u>	11/26/74	00:00:00-12/02/74	16:00:00 AND
	A ₁ <u>A₂</u> B CI <u>CII</u>	12/04/74	22:00:00-12/10/74	00:00:00
	A ₁ <u>A₂</u> B CI CII <u>CIII</u>			
2	<u>SI</u> SII ₅ <u>SIIA</u> <u>SIII</u>	11/26/74	00:00:00-12/02/74	18:00:00 AND
	<u>SI</u> SII ₆ <u>SIIA</u> <u>SIII</u>	12/03/74	09:00:00-12/10/74	00:00:00
	<u>SI</u> SII ₇ <u>SIIA</u> <u>SIII</u>			
	<u>SI</u> SII ₈ <u>SIIA</u> <u>SIII</u>			
3	DI ₄	11/26/74	00:00:00-12/02/74	16:00:00 AND
	DI ₅	12/03/74	08:00:00-12/10/74	00:00:00
	DI ₆			
	DI ₇			
	DI DII E ₂ <u>F</u>			
4	SI ₁ <u>SII</u> <u>SIIA</u> <u>SIII</u>	11/26/74	00:00:00-12/02/74	18:00:00 AND
	SI ₆ <u>SII</u> <u>SIIA</u> <u>SIII</u>	12/03/74	08:00:00-12/10/74	00:00:00
	SI ₂ <u>SII</u> <u>SIIA</u> <u>SIII</u>			
5	SI ₃ <u>SII</u> <u>SIIA</u> <u>SIII</u>	11/26/74	00:00:00-12/02/74	18:00:00 AND
	SI SII ₁ <u>SIIA</u> <u>SIII</u>	12/03/74	08:00:00-12/10/74	00:00:00
	SI SII ₂ <u>SIIA</u> <u>SIII</u>			

Table 4. Contents of PIOSAG

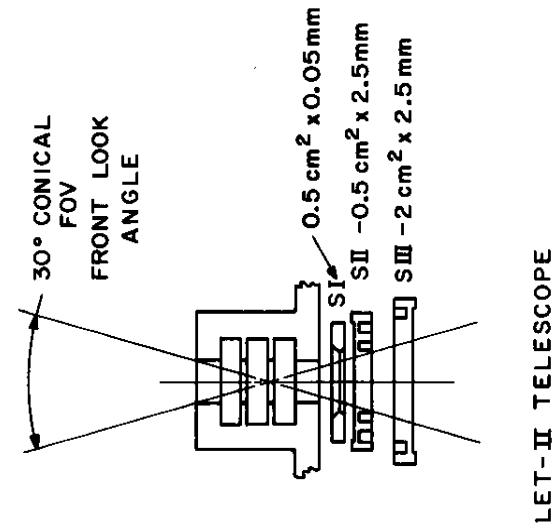
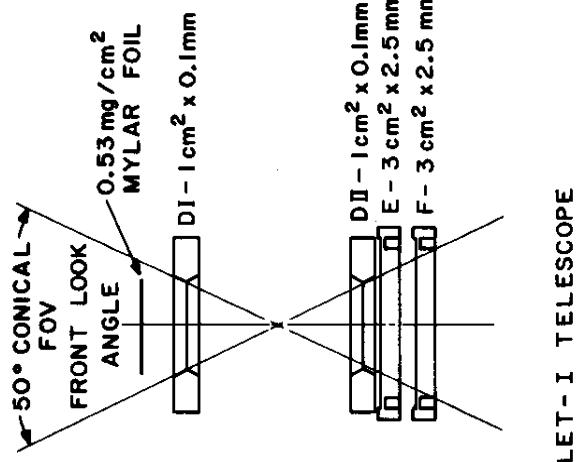
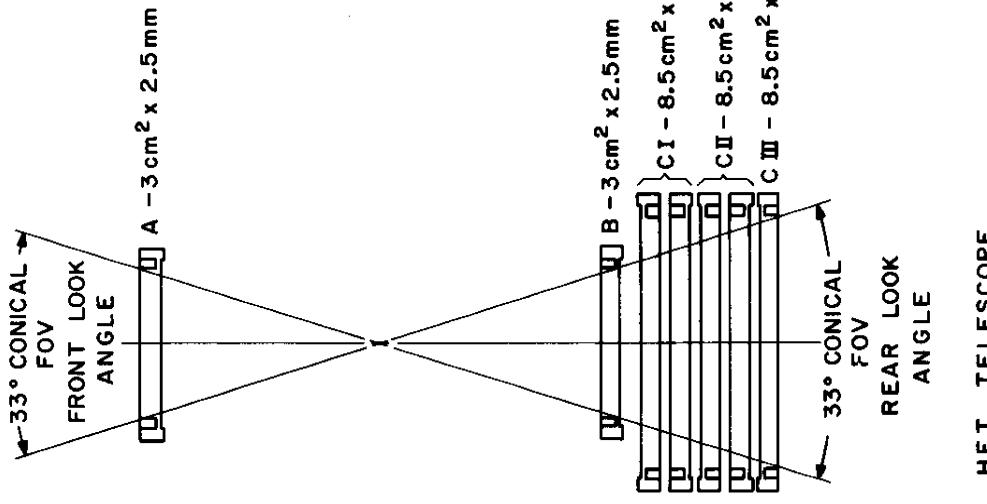
<u>FILE</u>	<u>RATES</u>	<u>TIME PERIOD</u>		
1	A ₂	8/31/79	00:00:00-9/01/79	13:30:00 AND
	SI SII ₅ <u>SIIA</u> <u>SIII</u>	9/01/70	19:00:00-9/04/79	12:00:00
	SI SII ₆ <u>SIIA</u> <u>SIII</u>			
	SI SII ₇ <u>SIIA</u> <u>SIII</u>			
	SI SII ₈ <u>SIIA</u> <u>SIII</u>			
2	DI ₅	8/31/79	00:00:00-9/01/79	13:30:00 AND
	DI ₆	9/01/70	19:00:00-9/04/79	12:00:00
	DI ₇			
	DI DII E ₂ <u>F</u>			
3	SI ₁ <u>SII</u> <u>SIIA</u> <u>SIII</u>	8/31/79	00:00:00-9/01/79	13:30:00 AND
	SI ₆ <u>SII</u> <u>SIIA</u> <u>SIII</u>	9/01/79	19:00:00-9/04/79	12:00:00
	SI ₂ <u>SII</u> <u>SIIA</u> <u>SIII</u>			
4	SI ₃ <u>SII</u> <u>SIIA</u> <u>SIII</u>	8/31/79	00:00:00-9/01/79	13:30:00 AND
	SI SII ₁ <u>SIIA</u> <u>SIII</u>	9/01/79	19:00:00-9/04/79	12:00:00
	SI SII ₂ <u>SIIA</u> <u>SIII</u>			

Table 5. STRUCTURE OF FLUX TIME-HISTORY RECORD

WORD	HALFWORD	TYPE	DESCRIPTION
1	1	Integer	Number of data items contained in the record (NBIN).
3-35	2	Integer	Number of averaging intervals (NINT) contained in the record.
3-35		character	132-character title identifies satellite and gives the start time of first averaging interval and last averaging interval in the record.
36-68		character	132-character description of first data item.
69-101		character	132-character description of second data item, if $NBIN \geq 2$. Otherwise, not used.
102-134		character	132-character description of third data item, if $NBIN \geq 3$. Otherwise, not used.
135-167		character	132-character description of fourth data item, if $NBIN \geq 4$. Otherwise, not used.
168-200		character	132-character description of fifth data item, if $NBIN \geq 5$. Otherwise, not used.
<u>NBIN < 5</u>			
201-			NINT Averaging Interval Entries (AIE). The structure of an AIE is shown in Table 5.
<u>NBIN = 6</u>			
201-233		character	132-character description of sixth data item.
234-			NINT Averaging Interval Entries.

Table 6. STRUCTURE OF AVERAGING INTERVAL ENTRY

WORD	HALFWORD	TYPE	DESCRIPTION	
1	1	Integer	2-digit year	
	2	Integer	month of year	
2	1	Integer	day of month	Start time of averaging interval
	2	Integer	hour of day	
3	1	Integer	minute of hour	
	2	Integer	second of minute	
4- (3+2*NBIN)		Real	NBIN FLUX entries. Each FLUX entry is two words long. If the second word of the entry is -1.0, data for this item is not available; otherwise the first word is the value of flux and the second word contains the associated statistical error.	



PIONEER F & G DETECTOR COMPLEMENT
COSMIC RAY ENERGY SPECTRA

FILE 4 RECORD 5 LENGTH 5 2348BYTES										C540D7C5	D9C9D6C4
(	)	0003002B)	77777777	D7C9D6D5	T5C5D970	E2464040	40C6D3E4	E740C6D6	D940E3C8	C540D7C5	D9C9D6C4
(	40)	4040F961	40F361F7	F940F1F9	7A40F07A	40F04053	06404059	6140F461	F7940F40	F57AF3F0	7A10F040
(	80)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(	120)	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040	40404040
(	160)	F25D4060	404D9F1	F5C44061	40F14BF5	F0F0C560	F0F25D40	40404040	40404040	40404040	40404040
(	200)	D91F5C3	407E40E2	4B5FE2F2	4DC15D4B	5FE2F340	4DC15D4B	5040D9F1	F5C440E2	F14DFF5D	
(	240)	4B5FE2F2	407E40E2	4B5FE2F2	4DC15D4B	5FE2F340	40404040	40404040	40404040	C240F7E40	4D9F1F6
(	280)	C1406140	F14BF5F0	F0C560F0	F25D4060	4040D9F1	F6C34061	40F14BF5	F0F0C560	F0F25D40	40404040
(	320)	40404040	40404040	40404040	40404040	D9F1F6C1	407E40E2	F14BE2F2	4DF15D4B	5FEE2F24D	C15D4B5F
(	360)	40D9F1F6	C340E2F1	4BE2F24D	F35D4B5F	E2F24DC1	5D4B5FFE2	F3404040	40404040	E2F34050	
(	400)	40404040	40404040	40404040	40404040	40D9F1F6	C2406140	F14BF5F0	F0C560F0	F25D4060	40404040
(	440)	F0F0C560	F0F0C4B5F	F0F0C560	F0F0C560	40404040	40404040	40404040	40404040	40404040	40404040
(	480)	5FE2F24D	C15D4B5F	40F34050	40D9F1F6	C340E2F1	4BE2F24D	F35D4B5F	E2F24DC1	5D4B5FFE2	F3404040
(	520)	40404040	40404040	40404040	40404040	77777777	77777777	77777777	77777777	77777777	77777777
(	560)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(	600)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(	640)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(	680)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(	720)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(	760)	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777
(	800)	004F0009	00030013	00000000	4130E38D	4130E651	411CE38D	40E50CF8	411CE38D	40E50CF8	004F0009
(	840)	00030013	00000000	4142AAAB	41143698	41238E38	40E0DF82	411FC71	40D55555	004F0009	00030013
(	880)	001E0000	41301C70	4116E7F8	4126E38E	40F1C0C71	40C38E39	404F0009	00030013	00030000	00030000
(	920)	412C71C6	40F6560D	413E38E3	4116A98D	412D8E38	41113FC38	404F0009	00030014	00030000	413438E4
(	960)	4110F5DB	411638E2	40BC246F	4111C71B	40AE2F9B	004F0009	00030014	00F00000	412C71C7	41119176
(	1000)	413E38E4	4110A12D	411AAA	40AE2F9A	004F0009	00030014	001E0000	4130E38E	40EBD951	41238E38
(	1040)	40E0DF82	408E38E5	408E38E5	004F0009	00030014	002D0000	4139C71C	4139C71C	4143C71B	4114849A
(	1080)	4111C71B	40D93F7E	004F0009	00030015	00000000	41151C71	41151C71	40C38E39	004F0009	00000000
(	1120)	406490F8	004F0009	00030015	00000000	4127FFF	411C00651	412C71C7	412C71C7	40D55555	408E38E4
(	1160)	004F0009	00030015	001E0000	41320000	4110AAAB	4110AAA	40B1C720	40FB6A6E	4126E38E	40EB2D8C
(	1200)	00030015	002D0000	4126E38E	40EB2D8C	411E0000	40D8E622	40C38E32	40A7B716	004F0009	00030009
(	1240)	00000000	4127FFFF	40EBD951	412C71C7	40E0DF84	40D55557	407B2B06	004F0009	0030016	000F0000
(	1280)	40ED0970	40A79C4A	41378E37	4118D85F	4118D85F	40FB6A70	004F0009	0030016	001E0000	00000000
(	1320)	40B1C71C	41133EB9	41133EB9	411DA12F	40E0D970	004F0009	00030016	00000000	00000000	C1100000
(	1360)	00000000	C1100000	00000000	C1100000	004F0009	00030017	00000000	00000000	C1100000	411638E3
(	1400)	411638E4	00000000	C1100000	004F0009	00030017	000F0000	4110AAA	40C6C2F7	41215555	40FB6A6F
(	1440)	411638E3	40D9B880	004F0009	00030017	001E0000	41250978	40CD47B5	4058E384	40890976	4058E384
(	1480)	40B90F76	004F0009	00030017	002D0000	412C71C7	40FB6A70	41215555	40B1C71C	40B1C71C	4066A3D9
(	1520)	4138423F	004F0009	00030000	411B7C71C	40FB6C2F9	4110AAA	40C6C2F7	41215555	40FB6A6F	004F0009
(	1560)	004F0000	0000F0000	41250978	40BB64EB	412C71C7	40FB6A70	4058E38E	4058E38D	004F0009	00040000
(	1600)	001E0000	412C71C7	41133EB8	412C71C7	41105AE9	403B4261	40ACC4DA	004F0009	00040000	002D0000
(	1640)	414838E3	411407E5	4118C71C	40C6C2F9	4118C71C	40C6C2F9	004F0009	00040001	00000000	4142AAA
(	1680)	41109C3F	41320000	4110AAA	41105EB1	4118D83E	40FB6A70	004F0009	00040001	00000000	4110AAAB
(	1720)	40638423	406490F76	40B1C71C	4066A3D9	004F0009	00040001	001E0000	41378E39	4114C978	41378E39
(	1760)	41133EB8	41215555	40FB56A6F	004F0009	00040001	002D0000	41465EC0	412848C	41250978	4110903F
(	1800)	403B425E	40971501	004F0009	00040002	00000000	414838E3	411407E5	412C71C7	40FB6A70	4110903F
(	1840)	4099F5C6	004F0009	00040002	000F0000	4163FFF	4115E951	4128B0A1	411024E2	411284BD	40BB64EC
(	1880)	004F0009	00040002	001E0000	411065B1	411065B1	4158E38E	411638E3	411BCT1C	40C6C2F9	004F0009
(	1920)	004F0002	002D0000	41855555	411C53F0	41535555	4112F9D0	411812F6	40BDB8E2	004F0009	00040003
(	1960)	00000000	417A38E4	4117B71C	4115843E	41153555	4112C71C7	40FB6A70	004F0009	00040003	000F0000